

What is claimed is:

1. A method of screening for peptide ligands of a target protein, comprising the steps of:

- providing a collection of recombinant nucleic acids encoding complementary
5 peptides of said target protein, wherein said complementary peptides in aggregation
complement substantially the entire length of the said target protein;
expressing said peptides from said recombinant nucleic acids;
bringing said target protein into contact with said peptides expressed from said
recombinant nucleic acids; and
10 selecting one or more peptides expressed from said recombinant nucleic acids which
bind to said target protein as peptide ligand or ligands of said target protein.

2. The method of claim 1, wherein said collection of recombinant nucleic acids
are introduced into a plurality of genetic packages for expressing peptides encoded by said
15 recombinant nucleic acids; said target protein is brought into contact with said genetic
packages for selecting one or more peptides expressed from said recombinant nucleic acids
with the highest affinity to said target protein.

3. The method of claim 2, wherein said genetic packages are selected from the
20 group consisting of vegetative bacterial cells, bacterial spores, bacterial viruses and
eukaryotic cells.

4. The method of claim 2, wherein said genetic packages are bacteriophages
and said peptides are expressed on the surface of the particles of said bacteriophage.
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5. The method of claim 1, wherein said complementary peptides are anti-sense
peptides to said target protein. —

6. The method of claim 5, wherein said collection of recombinant nucleic acids
30 is prepared by generating random fragments from a nucleic acid encoding said target
protein and inserting said fragments into expression vectors.

7. The method of claim 6, wherein said random fragments are generated by amplifying said nucleic acid encoding said target protein with random hexamer oligonucleotide primers.

5 8. The method of claim 1, wherein said target protein is selected from the group consisting of IgE, IgA, IgG, IgD, IgM, ICAM-1 and LDL receptor.

9. The method of claim 1, wherein said target protein is a framework 2 segment from a heavy chain or light chain of an immunoglobulin molecule.

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10. A method of treating allergy and autoimmune diseases, comprising the usage of polypeptides or chemical compounds which bind to the framework 2 region of the human immunoglobulin.

15 11. The method of claim 10, wherein said allergy comprises allergic rhinitis and asthma.

12. The method of claim 10, wherein said autoimmune diseases comprises rheumatoid arthritis, myasthenia gravis, systemic lupus erythematosus, and autoimmune
20 nephritis.

13. The method of claim 10, wherein said polypeptide is a complementary peptide to the framework 2 region.

25 14. The method of claim 10, wherein said polypeptide is an antibody against the framework 2 region.

15. The method of claim 10, wherein said human immunoglobulin comprises IgG, IgA, IgE, IgM and IgD.

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